

**WHAT IS CLAIMED IS:**

1. In the process for producing graft polymers of the ABS type by the emulsion method, wherein

5 5 to 95 % by weight of a monomer mixture containing

A) 50 to 99 % by weight of at least one vinyl aromatic compound

B) 1 to 50 % by weight of at least one copolymer

10 are polymerised in the presence of

C) 95 to 5 % by weight of one or more graft substrates with glass transition temperatures  $<10^{\circ}\text{C}$ ,

15 the improvement comprising continuously monitoring the Raman spectra of the reaction mixture and introducing corrective measures if the concentration of one or more monomers deviates from its desired value.

20 2. The process according to claim 1, wherein the monomer concentrations are calculated from the Raman spectra by means of weighted subtraction.

3. The process according to claim 1, wherein the concentration of unpolymerised vinyl aromatic component A) in the reaction mixture is less than  
25 12 % by weight at any point in time.

4. The process according to claim 1, wherein the vinyl aromatic compound A) is styrene, the copolymer B) is acrylonitrile and the graft substrate C) is a polybutadiene rubber.

5. The process according to claim 1, wherein corrective measures are selected from increasing and decreasing the feed rate of at least one monomer or the initiator.